

Tilton & Associates, Inc.

Wetland Management
Ecological Restoration
Landscape Architecture
Resource Policy

MEMORANDUM

field date: 27 July 2004

report date: 30 July 2004

project: Proposed Ann Arbor High School
Maple Rd. / M14, Ann Arbor, MI

participants: Jane Tesner Kleiner, RLA - Tilton & Associates, Inc. (TAI)
Connie Pulcifer – Beckett & Raeder, Inc. (BRI)
David Szczygiel – Ann Arbor Public Schools, Environmental Education Coordinator
(AAPS)

re: Site Visit to Conduct Preliminary Ecological Assessment

The participants met on-site to walk the property to conduct an ecological assessment of the various natural features on-site. The intent of the walk was to understand the various types of natural features on the property and the ecological integrity and quality of the features. This information will be utilized by the design team preparing the base plans for the new high school site that will provide ecological preservation to the greatest extent possible while meeting programming needs, including environmental education opportunities.

Overview

The overall site consists of numerous ecological features, including forested wetlands, vernal pools, emergent wetlands (sedge meadows), an open water buttonbush swamp, a creek system, oak/hickory forests, second generation forests (young), sugar maple grove and various meadow/prairie habitats. These general areas are mapped in the included figure. Listed below are the descriptions of the areas with some details about those features. Design considerations will then be briefly discussed.

Existing Conditions

Wetlands:

- ❑ *Open water / buttonbush swamp* – This is probably the most easily identified feature on the site (refer to the aerial photograph). This pond is primarily an open water feature with an emergent edge containing buttonbush shrubs and cattail / sedge plants in the shallow water areas. The pond is surrounded by shrubby vegetation. This system has high ecological value, including various frog and toad species, as well as other amphibians and mammal species. The value is high because of the consistent water source, good food source (various insects and amphibians) and lots of shelter (thus places to raise young). Its proximity to woodlands help to make it valuable to certain amphibian species for part of their life cycle. This is primarily a surface water driven wetland system.
- ❑ *Creek and wetland system* – A creek system crosses the southern end of the site and has various wetlands associated with the system. The creek is a collector of surface water flows and eventually discharges to the Huron River, just to the north.
- ❑ *Emergent and Sedge Meadow wetlands* – There are several small wetlands that collect surface water runoff with a depth of less than 6 inches and dries out in the summer months. These

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wetlands are dominated by various sedge species and other native wetland species. These wetlands provide stormwater storage, infiltration of stormwater and wildlife value (food, water and shelter). There are several of these smaller wetlands across the site.

- ❑ *Forested wetlands and Vernal Pools* – Within the large forest area on the north central part of the site, there are several wetland features. Forested wetlands typical have less than 1 foot of standing water during the spring and dry out during the warmer summer months. Vernal pools are similar but will hold some water throughout the year. There are definitely two forested wetlands and one vernal pool in this woodland area. These areas are important to certain frog species, as well as salamanders.

Woodlands:

- ❑ *Oak / Hickory Forest* – The main woodland on the property is the large square in the north-central part of the site. This woodland is dominated by mature and young trees (many trees over 12-inch caliper). Species are diversified and include oaks, hickories, cherry, and some small shrub species, as well as numerous wildflower and sedge species. The canopy is dense (limited sunlight) while the understory is spread out making it easy to walk through and can easily see through the woods. This area is important to many mammal and avian species.
- ❑ *Woodland Edge with Shrubs* – The woodland edge is the area zone between the existing woodland and the cleared areas around the woods. The zone varies in width is typically has limited large trees (over 12-inch diameter) and it mostly young trees and shrubs. It is typically dense, providing good cover for wildlife.
- ❑ *Elm (Ulmus) Forest* – Along Maple Road to the north end of the site, the woodland is younger than the main forest on the site and consists primarily of elm trees. There is some evidence of Dutch elm disease creating some die off.
- ❑ *Riparian Corridor* – The creek corridor on the south side of the site is mainly a forested corridor. This is important for protecting the creek by having numerous root structures that stabilize the banks. These trees also provide shade to keep stream temperatures cool as well as slow down runoff into the stream (interception of rainfall and uptake by the trees). Slowly the volume of water that gets to the creek helps to minimize erosive forces in the creek.
- ❑ *Sugar Maple Grove* – In the southeast portion of the site (south of the creek) there is a sugar maple grove. These trees are relatively young (about 30-40 years old) and are typical for re-growth of a woodland that had been cleared.
- ❑ *Miscellaneous Trees and Shrubs* – There are numerous areas on the site that have young trees that are part of the regeneration of an area that has previously been cleared. These areas are typically a mix of trees and shrubs and can be very dense at the ground level and understory level. Trees typically are of lower quality, such as ash, elm, box elder, black locust, etc. Shrubs are typically grey dogwood, silky dogwood, hawthorn, as well as wild grape vines. These areas do have wildlife value for food and shelter but in general are considered lower quality.

Meadow / Prairie / Open:

- ❑ There are several areas that have open canopy and understory condition (lacking woody vegetation). These areas may contain some taller shrubs, such as dogwood, and smaller

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shrubs as St. John's Wort. Primarily these areas are wildflower and grass dominated groundcovers. These areas are valuable for avian and insect species, as well as small mammals and reptiles for food and shelter.

Wildlife Corridors:

- There are numerous corridors that are used by animals for different parts of their life cycles. Larger mammals (deer, coyote, fox, etc.) travel within and beyond the boundaries of this site. A major corridor (as illustrated in the figure) is based on available cover for protection. Trees and shrubby areas are an important component of cover. The wildlife corridors extend beyond the property to the neighboring subdivisions, even down to the Huron River.

Development and Planning Considerations

- *Preservation of Natural Features* – There has been numerous discussions about the need to protect the natural resources on this site to the greatest extent possible. This report is meant to assist the design team with understanding where the highest quality areas exist on-site. The AAPS has already expressed interest in protecting the creek and wetland areas on the south side of the site as well as the oak-hickory forest in the north-central portion. There are numerous wetlands on-site. Regulatory status of those wetlands varies and will be determined during the more detailed analysis of the site later this summer. The wetlands are various qualities from good to very good (based on habitat and invasive species). The open water / buttonbush swamp in the middle of the site does provide good habitat for the local wood frog population. It is understood that the design team has looked at alternatives for saving that pond, if practical. If features are to be saved, provide adequate buffers around these features will help to protect the integrity of those features (25-foot minimum).
- *Wetlands* – If wetlands are preserved on site, there is a good chance that the character of those wetlands would change. This would be driven by changes in hydrologic input (these are mostly surface water fed) as the local regulations will require collection of stormwater prior to discharge to natural areas, such as wetlands. Wetlands that have development around them may also experience a change in quality due to pollutant loads and debris that end up in the wetlands. Wetlands that are preserved but have development around them may be considered ecological traps such that species that utilize those areas have increased risk to get to areas necessary for part of their life cycle (i.e. lawn mowers in adjacent grass areas, road crossings to wetlands, etc.).

Wetlands can be relocated on-site, if avoidance is not practical. Wetland mitigation has been successfully used are numerous other sites in the area (Ann Arbor, SE Michigan, etc.). It is possible to re-create conditions of specific wetlands at locations on-site that will be less vulnerable to pollutants, debris, and intrusion. Preliminary areas have been identified based on topography (low places) and possible water sources (lots of surface water runoff). The important aspect for recreation will be to create complete ecosystems

with water sources, vegetation, shelter/habitat and food sources for the various species who will utilize the site.

- ❑ *Woodlands* – In regards to woodland, protection of the highest quality woodlands should be a priority. The oak-hickory forest has an intact overstory, understory and groundcover and appears to be the oldest woodlands on this site. Younger woods (second generation growth) or woodlands that have disease infestations (elm and ash) would be candidates for removal due to their decline in health and integrity. Preservation of wooded wildlife corridors also will be an important consideration for the design team.
- ❑ *Stormwater Management* – The size of the programming on the new school site will require stormwater management techniques. Utilizing a variety of techniques due to the size of the smaller created watersheds and the setting will help to protect and potentially enhance existing natural features. Creating a “treatment train” of features, several different features along the path of water runoff, will allow for filtering, slowing of velocities and reductions of volumes (infiltration, evaporation) thus being less of an impact on the site. These features can be created to look very natural by creating curving edges and using native plant species during the revegetation of the site. Capturing and re-use of stormwater can be an aesthetic and educational amenity to the campus, as well.
- ❑ *Educational Opportunities* – AAPS is fortunate to have environmental and outdoor education programs being utilized to educate students in hands-on techniques. The design of the high school campus could very easily make use of the various ecosystems that exist on site (as well as potentially created features, such as stormwater features). Siting of the building could take advantage of access to primary features such as the woodlands. Locations of laboratories could allow students access to these features for the various studies, including biology, chemistry, and general science. Providing access (doors, trails, etc.) and places to set up experiments would be helpful for teachers and students to utilize and learn from these features. Restoration opportunities exist for classroom studies, after-school programs or community service requirements such as invasive species removal and streambank stabilization in the creek. If Project Grow is interested in maintaining a program on the site, relocation may be possible (given the various features) and could be partnered with student programs for outdoor education opportunities.

Conclusion

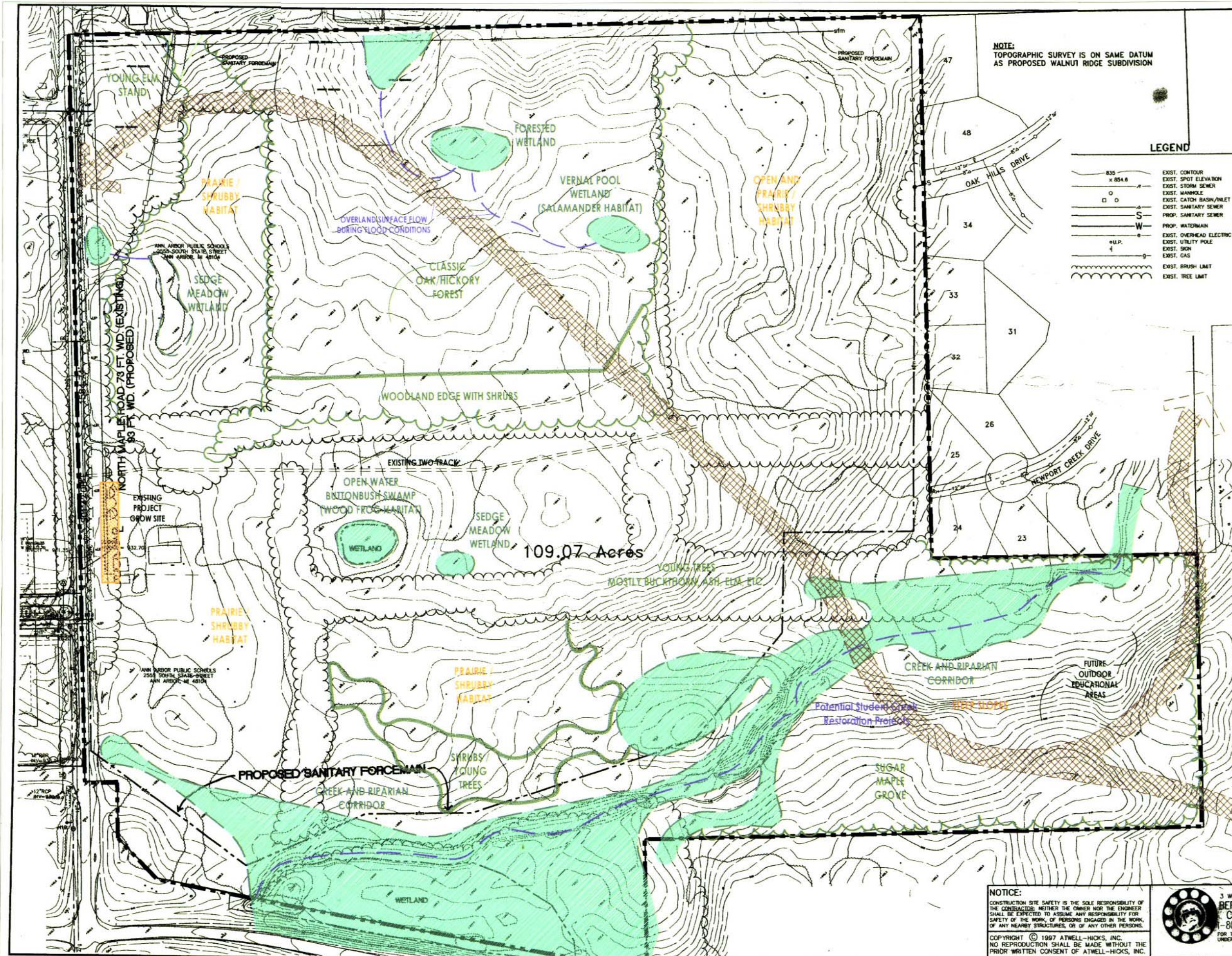
This report represents a preliminary look at the ecological resources. More detailed studies will be need to determine regulatory status of various features as well as to guide the design team in creating a campus that will be ecologically sounds, aesthetically pleasing and functional for the various educational opportunities.

PROPOSED ANN ARBOR HIGH SCHOOL

ANN ARBOR, MI
MAPLE ROAD / M14

29 JULY 2004

PRELIMINARY ECOLOGICAL ASSESSMENT



NOTE:
TOPOGRAPHIC SURVEY IS ON SAME DATUM
AS PROPOSED WALNUT RIDGE SUBDIVISION

LEGEND

	EXIST. CONTOUR
	EXIST. SPOT ELEVATION
	EXIST. STORM SEWER
	EXIST. MANHOLE
	EXIST. CATCH BASIN/INLET
	EXIST. SANITARY SEWER
	PROP. SANITARY SEWER
	PROP. WATERMAIN
	EXIST. OVERHEAD ELECTRIC
	EXIST. UTILITY POLE
	EXIST. SIGN
	EXIST. GAS
	EXIST. BRUSH LIMIT
	EXIST. TREE LIMIT

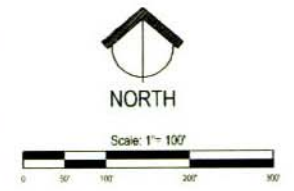
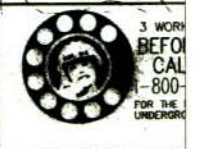
LEGEND:

	APPROXIMATE WETLAND LOCATION
	APPROXIMATE SURFACE WATER FEATURE
	APPROXIMATE SIGNIFICANT WOODLAND EDGE
	MAIN WILDLIFE CORRIDOR

NOTE:
ALL NATURAL FEATURE LOCATIONS ARE APPROXIMATE. MAIN CREEK WETLAND SYSTEM DELINEATED BY OTHERS.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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Tilton & Associates, Inc.
Wetland Management
Ecological Restoration
Construction & Infrastructure
Restoration Policy
501 Ave. DeWitt, Ste. 302
Ann Arbor, MI 48106
Tel: 734-769-3004
Fax: 734-769-3154